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To the Committee of the Subſcribers to the Grand Junction Canal.

GENTLEMEN,

I HAVE apprehended that the intention of the Survey which I have lately made, in conſequence of your doing me the honor of aſking my opinion, comprehends the following heads of enquiry.

First, *The General Practicability?*

Secondly, *Whether the Line that has been choſen is in general the moſt eligible?*

Thirdly, *Whether ſuch parts as will be particularly expenſive could be avoided?*

On the firſt head, I have no heſitation in ſaying that I can have no doubt of the practicability.

On the ſecond head, two leading objects are kept in view. First, that the points of commencement and termination ſhould be ſuch as beſt ſuit the intention of good communication between the extenſive Inland Navigation in the North and the Port of London. And Secondly, that the line of communication ſhould be as direct as it might conveniently be made.

If the Country were favourable to a junction with the Oxford Canal at any more ſoutherly point than Braunſton, it would be objectionable on account of the circuity of that Canal, and the conſequent increaſe of diſtance; and I believe that it would not be practicable to have a more northerly junction.

For the ſame reaſon it would be unadviſeable to join the Thames at any higher point of that River than New Brentford; and to fall lower into the Thames would, if practicable, be at leaſt very difficult and expenſive.

The terminating points being thus fixed, I had little expectation of diſcovering a ſhorter line between theſe points than the line pointed out by Mr. Barnes; indeed I was rather aſtoniſhed at finding (in paſſing through ſo great an extent of Country, interſected in various directions by Hills and Vallies, and where there was every appearance (if a line could be found) that at leaſt it would be unuſually circuitous) that this is not more then 15 Miles longer than the diſtance by the Roads.

The only obſtacles which materially enhance the expence are the high grounds at Braunſton, Bliſsworth, Langley Bury, and Tring; and I believe thoſe are unavoidable from the enquiries which I have made, where other paſſes ſeemed to invite attention: I have reaſon for thinking that Mr. Barnes has explored the Country with much aſſiduity, and has choſen his Ground with much judgement; in the whole line there are only two places where I could recommend a deviation, and thoſe are but of little importance; one is the cutting off a bend near Leighton Buzzard, *if* entering the County of Bedford is not an objection, and the notices have comprehended it; the other is, that the Entrance into the Thames ſhould be at the point where the River Brent now diſcharges itſelf, inſtead of the point where the Plan now deſcribes the junction higher up the River.

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I have eſtimated the expence on the ſuppoſition that the width of the Canal ſhould be 28 feet at the bottom, 42 feet at the water's ſurface, and the depth of water 4 f. 6 in.

The Locks I have ſuppoſed to be 14 f. 6 in. in width, and 80 feet in length in the Chambers;—thoſe will admit Boats that will carry from 50 to 70 Tons, and ſuch as will navigate with ſafety on the Thames, on the Trent if the communication ſhould take place with the Navigation to Leiceſter, and on the Merſey if the preſent Canals ſhould hereafter be widened, which is not improbable.

The Tunnels I ſhould propoſe to be 16 feet in width, 18 feet in height, and to have at leaſt 6 feet depth of water.

Locks of the above width will contain two of the Boats which now uſe the narrow Canals, and thoſe boats may paſs each other in the Tunnels.

Reſpecting the ſupplies of water, it is to be obſerved that, as there muſt be two ſummits, the quantity conſumed would be more than one would require, but not ſo much more as ſome might ſuppoſe: the loſs by exhalation and abſorption cannot be at all encreaſed by this circumſtance, they are only ſuch Veſſels as paſs both the Summits that will require a double quantity of water; the lower levels may be amply ſupplied, it is the ſupply for the Summit only that is queſtionable.

The wetneſs of the ſeaſon would have made any actual admeaſurements of mine uſeleſs, in aſcertaining the ſupply for dry Seaſons; but in examining Mr. Barnes's admeaſurements I have very little doubt of the natural Streams, that may eaſily be brought to the Summits, affording a ſufficient ſupply for a moderate trade; his admeaſurements were not taken in a very dry ſeaſon, but I found that he made a conſiderable allowance for this circumſtance, and with this allowance he found that 30 locks full per day would flow into the Summit at Braunſton, and if this ſhould not hereafter be found ſufficient, a conſiderable addition might be made by the means of a Reſervoir for collecting and preſerving Flood Waters.

To the Summit at Tring he found that from Bulbourne Spring and the Tail at New Mill 30 locks full per day might be obtained,—ſome might be collected by a Reſervoir in this caſe alſo, but not much to be depended on: In Clay ſoil ſuch as at Braunſton, the extremes of wet and dry Seaſons differ as much as One Thouſand to One: In Chalky and Gravelly Soils the difference is ſeldom more than as Four to One, for in the former caſe heavy rains produce great floods, and little is abſorbed;—in the latter caſe there are ſeldom any floods, for almoſt the whole is abſorbed, and it only operates for a while to increaſe the ſupply by the Springs, which may be conſidered as the diſcharges of natural Reſervoirs, diſpenſing frugally for many Months what would be laviſhed from the ſurface of Clayey Soil in a few days.

But if the ſupply that may be brought into this Summit ſhould hereafter be found to be inſufficient, and particularly if the propoſed Canal to Oxford ſhould demand much additional ſupply, any quantity may be got from Streams at a lower Level by means of a Steam Engine, ſo that in any caſe I conſidered that the practicability of getting Water ſufficient is beyond a doubt.

In eſtimating the expence of making the Canal, I have thought it neceſſary to make very large allowances for the encreaſed and encreaſing price of Labour, in conſequence of the numerous works of this kind now in agitation, and I have full confidence that the expence will not exceed the eſtimate. While I ſay ſo, I am of opinion, that if the expence were to be doubled it would be an eligible project, and productive of more public benefit than any thing of the kind that has yet been done in this kingdom: without enumerating particulars, it is ſufficient to ſay, that the three great circumſtances, viz. making a direct communication with the Great Northern Manufactories and the Port of London;—the ſupplying Coal at a cheap rate to the Inland Counties where that article is extremely expenſive; and the carrying proviſions of all kinds to the Metropolis, where the conſumption is almoſt unbounded, muſt baniſh all doubt (if any there ſhould be) from the minds of thoſe who have had an opportunity of obſerving the effect produced by Canals already exiſting, in ſituations where the objects are much more limited.

As it has been a queſtion, whether from the point called Two Waters the courſe of the Canal would be the moſt adviſeable by Watford or by Uxbridge, I viewed both the lines, and found there were many reaſons for preferring the latter direction. As the Committee are already in poſſeſſion of circumſtances ſufficient to determine their opinion, it is unneceſſary for me to ſtate them.

Four Branches, if found eligible, may be adopted and made part of the preſent Plan: One from Daventry,—One from Northampton to join the line at Gayton,—One from Stoney Stratford, and One from Watford; and I have little doubt but that many more hereafter will contribute to expand its benefits. As the Surveys of the two laſt-mentioned Branches are not yet complete, I cannot particularly deſcribe them nor ſpecify the Expence:—I can ſay that they are practicable, and I think very adviſeable.

The Branch to Daventry will be near a Mile and an half in length, and muſt have about eight Locks, as the fall is 52 feet—The Coſts of it will be at leaſt £.6000. As Daventry is about three Miles from Braunſton, if ſuch Branch could not be made, no Coal could paſs on the main Canal to Daventry. Whether the trade of Daventry will be ſuch as to pay for the expence of this Branch, either from its quantity, or from its being able to bear a high Tonnage, I am unable to judge.

The Branch from Gayton to Northampton will be 4½ Miles in length, and the fall will be 117 feet,—the expence of it will be £.18,785. It might be doubtful whether, as a Branch to Northampton only, the trade on it would anſwer this expence; but as the propoſed communication with Leiceſterſhire will probably bring a very conſiderable trade through it, I would ſubmit to the Committee that they may with propriety adopt it.

W. JESSOP.

NORTHAMPTON, *October* 24th, 1792.

Grand Junction Canal.

Mr. JESSOP'S *Report.*

	£.
Eſtimate, excluſive of collateral Branches,	372,175
Branch to Northampton	18,785